

Appl. No. 09/581,345  
Amdt. dated May 28, 2004  
Amendment under 37 CFR 1.116 Expedited Procedure  
Examining Group

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-112. Canceled.

1 1/3. (Previously presented) An isolated anti-mesothelin antibody comprising a variable heavy ("V<sub>H</sub>") chain and a variable light ("V<sub>L</sub>") chain, which V<sub>H</sub> and V<sub>L</sub> chains have complementarity-determining regions ("CDRs") as set forth in Figure 1 (SEQ ID NO:5).

2 1/4. (Previously presented) An antibody of claim 1/3, wherein said V<sub>H</sub> and V<sub>L</sub> chains comprise framework regions ("FRs") as set forth in Figure 1 (SEQ ID NO:5).

3 1/5. (Previously presented) An antibody of claim 1/3, wherein said antibody is a single chain Fv ("scFv").

4 1/6. (Previously presented) An antibody of claim 1/5, wherein said scFv has V<sub>H</sub> and V<sub>L</sub> chains joined by a peptide linker.

5 1/7. (Previously presented) An antibody of claim 1/6, wherein said peptide linker has the sequence of SEQ ID NO:6.

6 1/8. (Previously presented) An scFv of claim 1/5, wherein said scFv has the sequence shown in Figure 1 (SEQ ID NO:5).

7 1/9. (Previously presented) An antibody of claim 1/3, which is a disulfide stabilized Fv ("dsFv").

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8 1/20. (Currently amended) A dsFv of claim 1/19, having a ~~V<sub>L</sub>~~ chain containing a cysteine at position 42, 43, 44, 45, 46, 98, 99, 100, or 101, such positions being determined in accordance with the numbering scheme published by Kabat and Wu, and a V<sub>H</sub> chain containing a cysteine at position 43, 44, 45, 46, 47, 103, 104, 105 or 106, comprising a V<sub>L</sub> chain paired with a V<sub>H</sub> chain, said chains being connected through a disulfide bond between a pair of cysteines, said pair of cysteines being positioned in the respective chains at positions selected from the group consisting of: V<sub>H</sub>44-V<sub>L</sub>100; V<sub>H</sub>105-V<sub>L</sub>43; V<sub>H</sub>105-V<sub>L</sub>42; V<sub>H</sub>44-V<sub>L</sub>101; V<sub>H</sub>106-V<sub>L</sub>43; V<sub>H</sub>104-V<sub>L</sub>43; V<sub>H</sub>44-V<sub>L</sub>99; V<sub>H</sub>45-V<sub>L</sub>98; V<sub>H</sub>46-V<sub>L</sub>98; V<sub>H</sub>103-V<sub>L</sub>43; V<sub>H</sub>103-V<sub>L</sub>44, such positions being determined in accordance with the numbering scheme of Kabat and Wu.

9 1/21. (Previously presented) An antibody of claim 1/13, wherein said V<sub>H</sub> and V<sub>L</sub> chains are encoded by SEQ ID NO:1.

122. Canceled.

10 1/23. (Previously presented) An antibody of claim 1/13, further wherein said antibody is labeled with a detectable label.

11 1/24. (Previously presented) An scFv of claim 1/15, further wherein said scFv is labeled with a detectable label.

12 1/25. (Previously presented) A dsFv of claim 1/19, which dsFv is labeled with a detectable label.

13 1/26. (Previously presented) An antibody of claim 1/13, further wherein said antibody is attached or fused to a therapeutic agent.

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14 127. (Previously presented) An scFv of claim 115, further wherein said scFv is attached or fused to a therapeutic agent.

15 128. (Previously presented) A dsFv of claim 149, further wherein said dsFv is attached or fused to a therapeutic agent.

16 129. (Previously presented) An antibody of claim 126, wherein said therapeutic agent is a toxin.

17 130. (Previously presented) An scFv of claim 127, wherein said therapeutic agent is a toxin.

18 131. (Previously presented) A dsFv of claim 128, further wherein said therapeutic agent is a toxin.

19 132. (Previously presented) An antibody of claim 129, wherein said toxin is a *Pseudomonas* exotoxin or cytotoxic fragment or mutant thereof.

20 133. (Previously presented) An scFv of claim 130, wherein said toxin is a *Pseudomonas* exotoxin or cytotoxic fragment or mutant thereof.

21 134. (Previously presented) A dsFv of claim 131, wherein said toxin is a *Pseudomonas* exotoxin or cytotoxic fragment or mutant thereof.

22 135. (Previously presented) An isolated anti-mesothelin antibody comprising a variable heavy ("V<sub>H</sub>") chain which V<sub>H</sub> chain has complementarity-determining regions as set forth in Figure 1 (SEQ ID NO:5).

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23 136. (Previously presented) An antibody of claim 135, wherein said V<sub>H</sub> chain has the sequence set forth in Figure 1 (SEQ ID NO:5).

24 137. (Previously presented) An antibody of claim 135, wherein said antibody is attached or fused to a therapeutic agent or detectable label.

25 138. (Previously presented) An antibody of claim 135, wherein said therapeutic agent is a toxin.

26 139. (Previously presented) An antibody of claim 138, wherein said toxin is a *Pseudomonas* exotoxin or cytotoxic fragment or mutant thereof.

27 140. (Previously presented) An isolated anti-mesothelin antibody comprising a variable light ("V<sub>L</sub>") chain which V<sub>L</sub> chain has complementarity-determining regions as set forth in Figure 1 (SEQ ID NO:5).

28 141. (Previously presented) An antibody of claim 140, wherein said V<sub>L</sub> chain has the sequence set forth in Figure 1 (SEQ ID NO:5).

29 142. (Previously presented) An antibody of claim 140, wherein said antibody is attached or fused to a therapeutic agent or detectable label.

30 143. (Previously presented) An antibody of claim 142, wherein said therapeutic agent is a toxin.

31 144. (Previously presented) An antibody of claim 143, wherein said toxin is a *Pseudomonas* exotoxin or cytotoxic fragment or mutant thereof.

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32 / 145. (Previously presented) A composition comprising a pharmaceutically acceptable carrier and an immunoconjugate which comprises a therapeutic agent or a detectable label attached or fused to an anti-mesothelin antibody comprising a variable heavy ("V<sub>H</sub>") chain and a variable light ("V<sub>L</sub>") chain, which V<sub>H</sub> and V<sub>L</sub> chains have complementarity-determining regions ("CDRs") as set forth in Figure 1 (SEQ ID NO:5).

33 / 146. (Previously presented) A composition of claim 32 / 145, wherein said V<sub>H</sub> and V<sub>L</sub> chains comprise framework regions ("FRs") as shown in Figure 1 (SEQ ID NO:5).

34 / 147. (Previously presented) A composition of claim 32 / 145, wherein said antibody is a single chain Fv ("scFv").

35 / 148. (Previously presented) A composition of claim 34 / 147, wherein said scFv has V<sub>H</sub> and V<sub>L</sub> chains joined by a peptide linker.

36 / 149. (Previously presented) A composition of claim 35 / 148, wherein said peptide linker has the sequence of SEQ ID NO:6.

37 / 150. (Previously presented) A composition of claim 36 / 149, wherein said scFv has the sequence shown in Figure 1 (SEQ ID NO:5).

38 / 151. (Previously presented) A composition of claim 37 / 150, wherein said antibody is a disulfide stabilized Fv ("dsFv").

39 / 152. (Previously presented) A composition of claim 38 / 151, wherein said therapeutic agent is a toxin.

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40 153. (Previously presented) A composition of claim 152, wherein said toxin is a modified *Pseudomonas* exotoxin or a cytotoxic fragment or mutant thereof.

41 154. (Previously presented) A composition comprising a pharmaceutically acceptable carrier and an immunoconjugate which comprises a therapeutic agent or a detectable label attached or fused to an anti-mesothelin antibody comprising a variable heavy ("V<sub>H</sub>") chain having complementarity-determining regions ("CDRs") as set forth in Figure 1 (SEQ ID NO:5).

42 155. (Previously presented) A composition of claim 154, wherein said V<sub>H</sub> chain comprises framework regions ("FRs") as set forth in Figure 1 (SEQ ID NO:5).

43 156. (Previously presented) A composition of claim 154, wherein said therapeutic agent is a toxin.

44 157. (Previously presented) A composition of claim 154, wherein said toxin is a modified *Pseudomonas* exotoxin or a cytotoxic fragment or mutant thereof.

45 158. (Previously presented) A composition comprising a pharmaceutically acceptable carrier and an immunoconjugate which comprises a therapeutic agent or a detectable label attached or fused to an anti-mesothelin antibody comprising a variable light ("V<sub>L</sub>") chain having complementarity-determining regions ("CDRs") as set forth in Figure 1 (SEQ ID NO:5).

46 159. (Previously presented) A composition of claim 158, wherein said V<sub>L</sub> chain comprises framework regions ("FRs") as set forth in Figure 1 (SEQ ID NO:5).

47 160. (Previously presented) A composition of claim 158, wherein said therapeutic agent is a toxin.

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48 161. (Previously presented) A composition of claim 138, wherein said toxin is a modified *Pseudomonas* exotoxin or a cytotoxic fragment or mutant thereof.

49 162. (Previously presented) A kit for detecting mesothelin on the surface of cells, said kit comprising:

(i) anti-mesothelin antibody comprising a variable heavy ( $V_H$ ) chain and a variable light (" $V_L$ ") chain, which  $V_H$  and  $V_L$  chains have complementarity-determining regions ("CDRs") as set forth in Figure 1 (SEQ ID NO:5); and,

(ii) instructions printed on a tangible medium, said instructions describing methods of using and said antibody for detecting mesothelin on the surface of cells.

50 163. (Previously presented) A kit of claim 162, wherein said  $V_H$  and  $V_L$  chains of said antibody have the sequence set forth in Figure 1 (SEQ ID NO:5).

51 164. (Previously presented) A kit of claim 162, wherein said antibody is a scFv.

52 165. (Previously presented) A kit of claim 164, wherein said scFv has the sequence set forth in SEQ ID NO:5.